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(71) Applicant

Tomy Company Ltd

(Incorporated in Japan)

9-10, Tatetsu 7-chome, Katsushika-ku, Tokyo, Japan

(72) Inventor

Michihiro Kozakua

(74) Agent and/or Address for Service

W P Thompson & Co

Coopers Building, Church Street, Liverpool, L1 3AB,
United Kingdom

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(54) Coin deposit toy bank

(57) A toy bank has an entrance (2) for throwing in a coin (7), a doll body (5) inverted inside the toy bank, a concave mirror (8) reflecting the doll body (5) to appear upright within the toy bank, and a viewing window (3) through which both the coin (7) and the upright reflection may be viewed together. For example, the coin (7) may be thrown through the entrance into a mouth portion (6) of the doll body (5) so that a reflection is created in which the coin (7) appears to be in the mouth (6) of the image of the doll body (5), and upon operation of an external element (9), appears to be eaten by the image of the doll body (5). As another example, the coin may be dropped between the hands of the doll, so that a reflection is created in which the image of the doll appears to hold the coin in its hands, and upon operation of an external element (9), the hands (114) of the doll are raised and the coin appears to disappear. The external operating element (9) is provided to operate a coin release (5C, 5F) in the doll body (5) to release the coin (7) into a coin storing area (25B) of the toy bank.

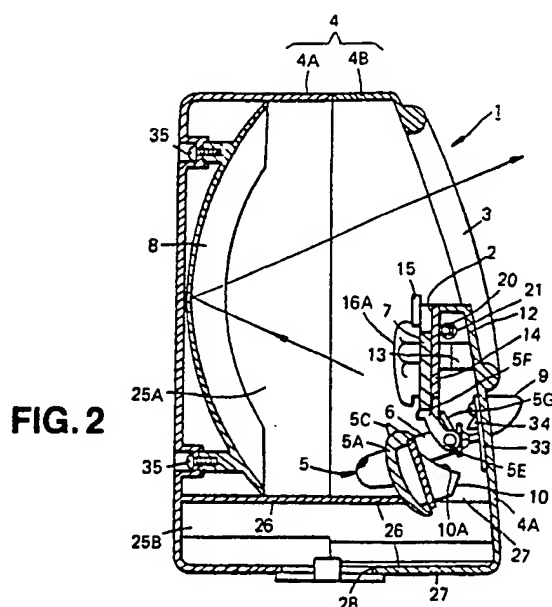


FIG. 2

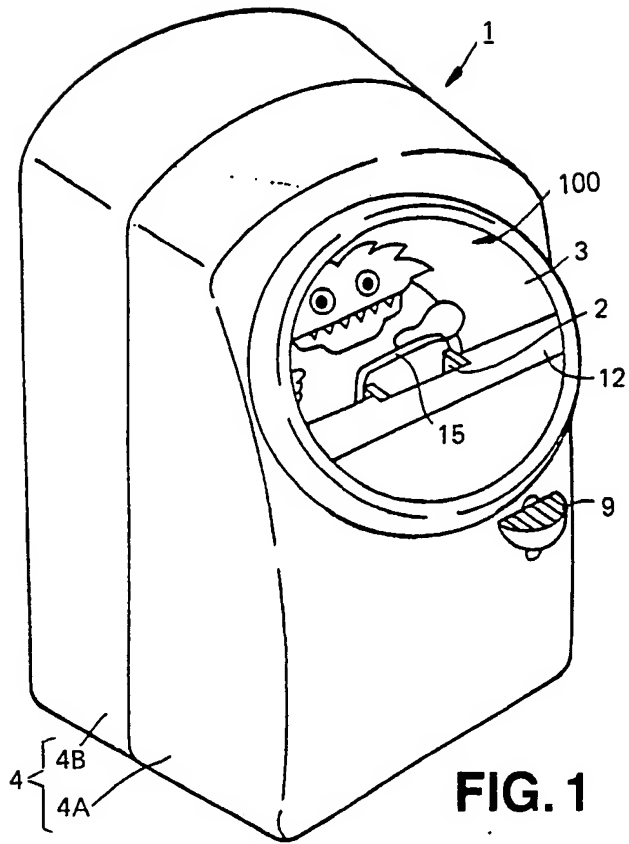
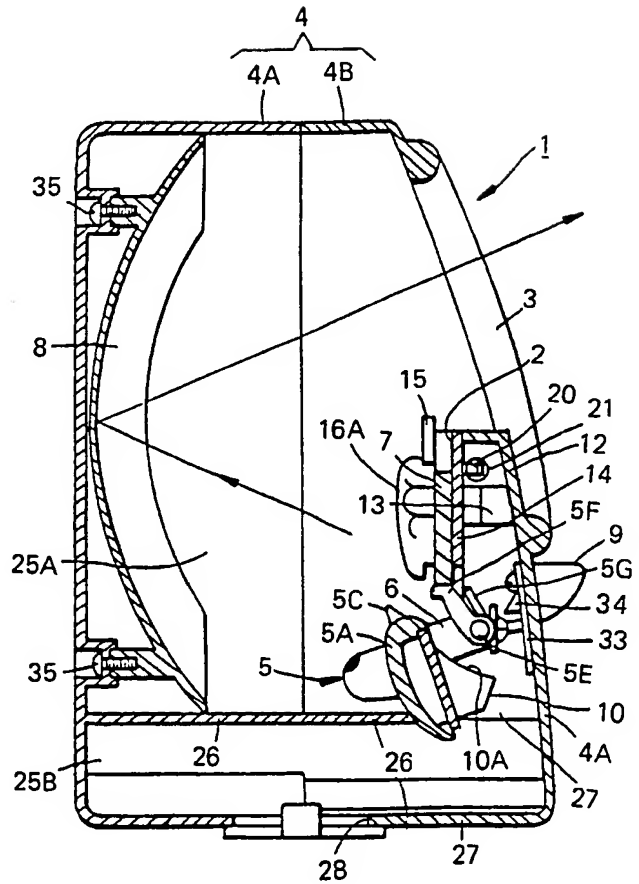


FIG. 1

FIG. 2



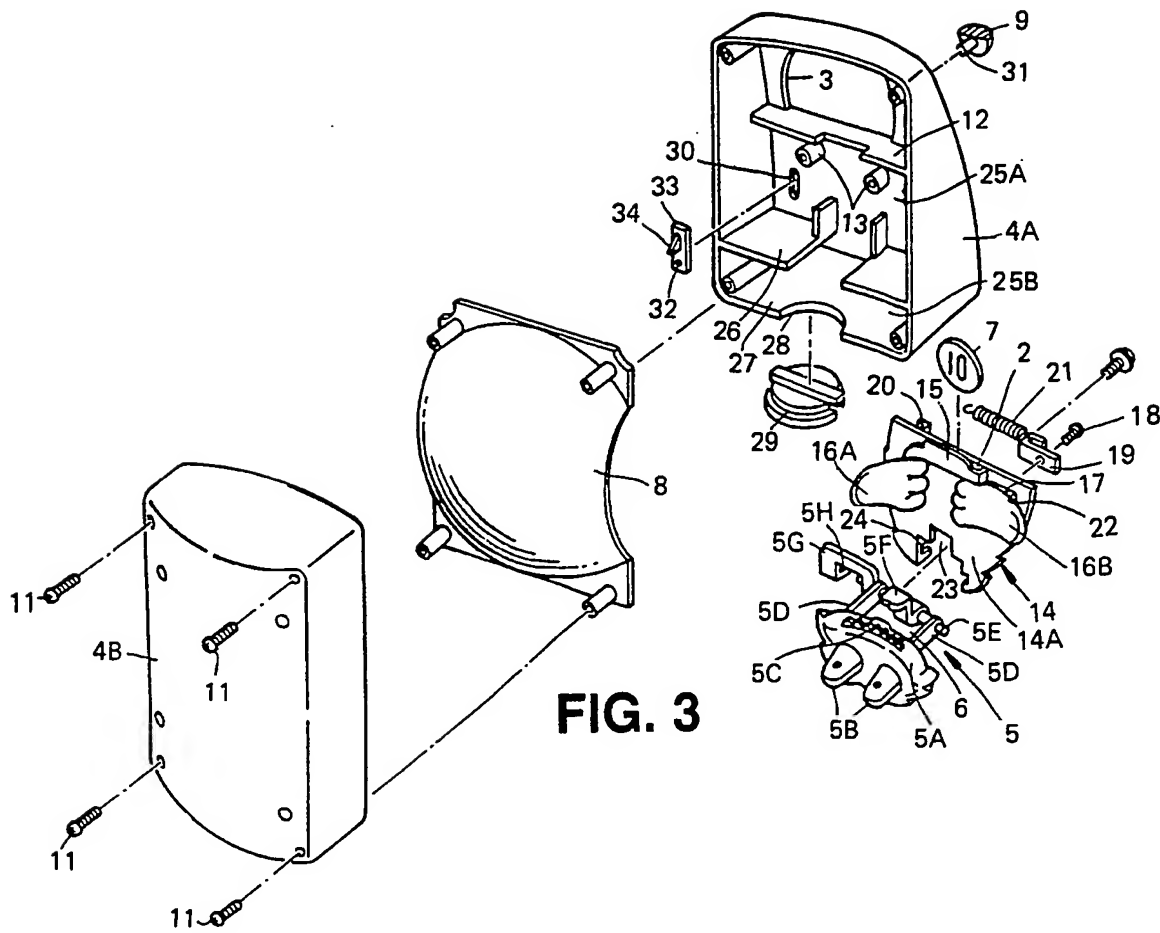


FIG. 3

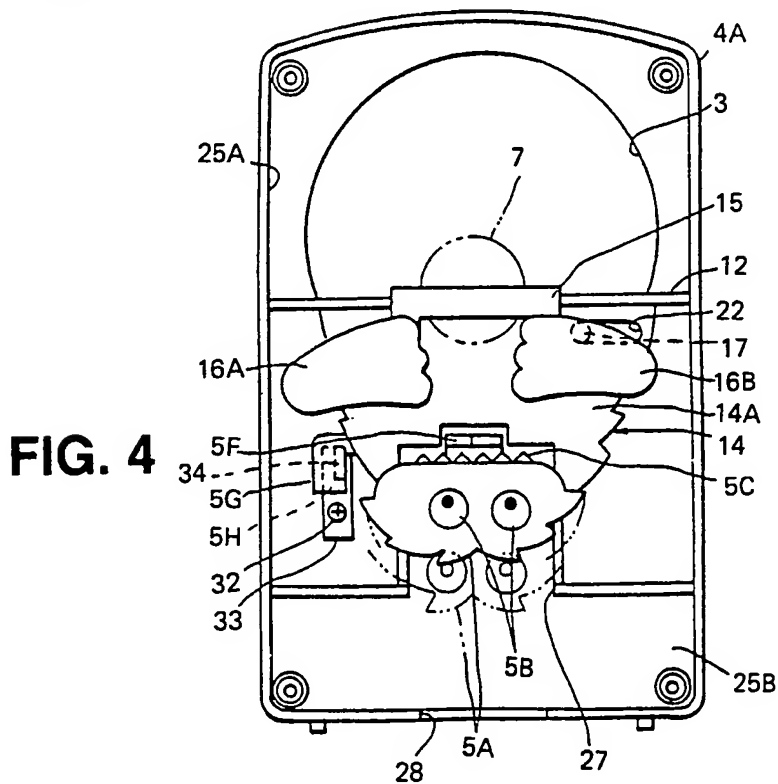


FIG. 4

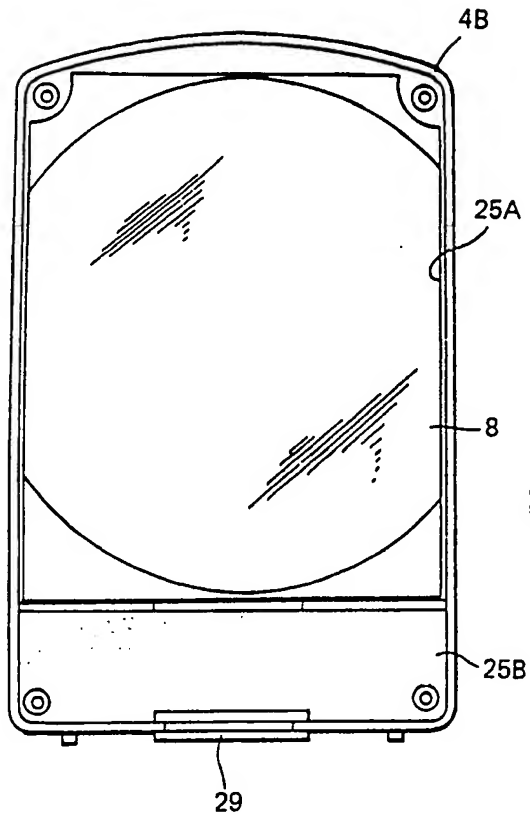


FIG. 5

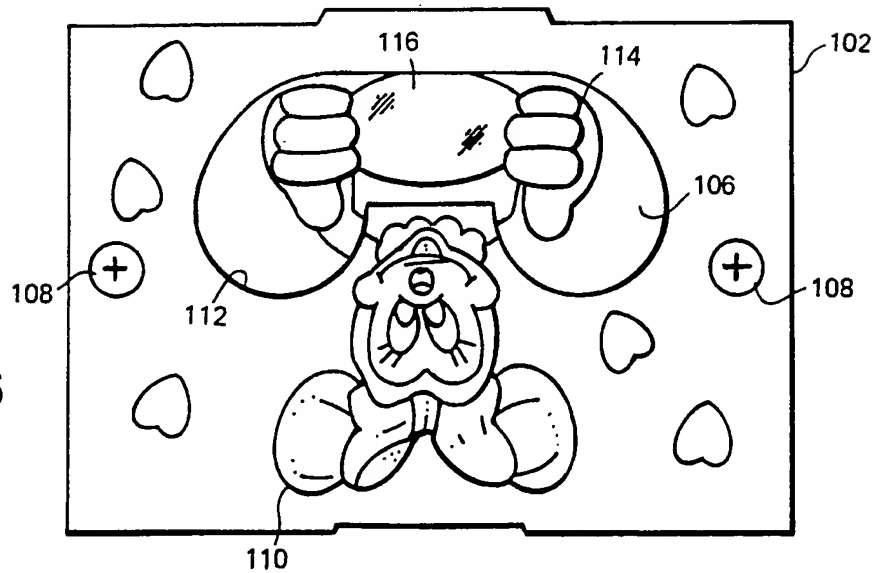


FIG. 6

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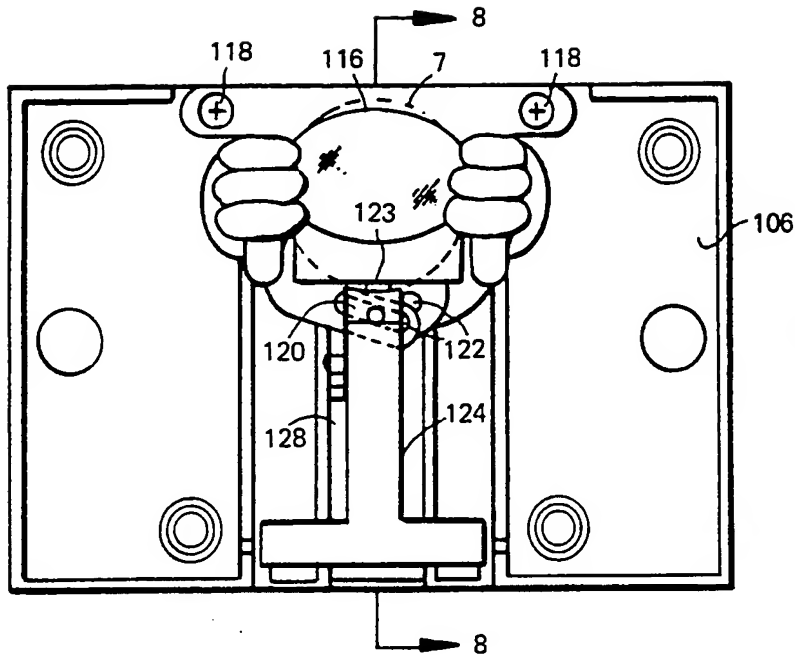


FIG. 7

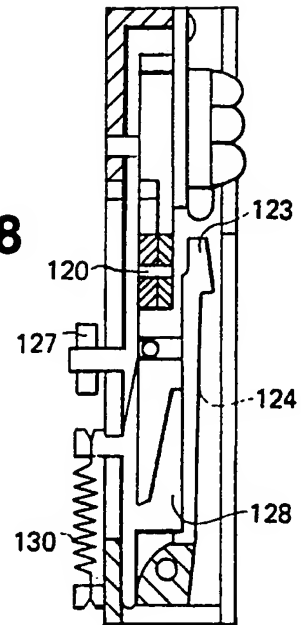


FIG. 8

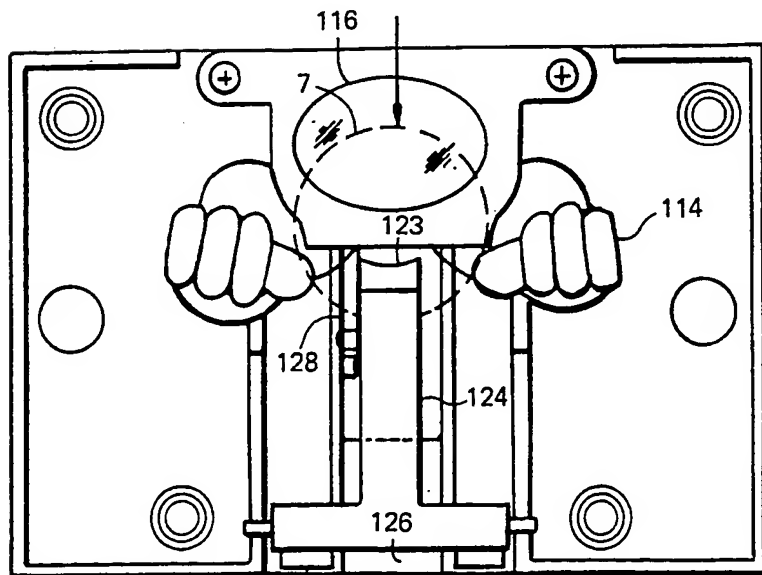


FIG. 9

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DESCRIPTIONCOIN DEPOSIT TOY BANK

The present invention relates to a coin deposit toy bank in which a coin deposited into the body of the bank appears with an image of a doll body reflected by a concave mirror.

Conventionally, a variety of toy banks have been proposed and widely used. In these conventional toy banks, if a coin is thrown into the body of the bank, then the coin is automatically dropped into the inside of the body by its own weight and, as a result, it is stored inside the toy bank without thereafter being seen.

Generally the object of toy banks of the type mentioned above is to store small amounts of money collected in every day life, such as coins. Accordingly, a bank is desired in which a large number of coins can be stored in a short period of time.

However, conventional toy banks have been proposed principally based on improving an aesthetic appearance of the bank. As such, the shape of the bank has been that of an animal, or has had decorations on its outer periphery, etc. No proposals have been made, however, for a toy bank which actually causes a user of the bank to have a desire to deposit a coin. Consequently, existing toy banks do not encourage users thereof to deposit coins and, as a result, the coins are not accumulated very frequently in these toy banks.

The present invention has been made in view of overcoming the problems of conventional toy banks discussed above. Accordingly, it is an object of the present invention to provide a coin deposit toy bank

which may cause an owner to desire to deposit a coin into the toy bank. Thus it may well be that a large number of coins are caused to be accumulated in a short period of time.

According to the present invention there is provided a coin deposit toy bank into which a coin is deposited, comprising:

- a bank body;

- a coin retaining figure, connected within said bank body, and retaining the coin upon deposit; and

- a mirror connected within said bank body and confronting said coin retaining figure, and reflecting an image of the coin together with said coin retaining figure.

In a preferred embodiment the bank has an entrance for throwing in a coin, a doll body inverted inside the toy bank, a concave mirror reflecting the doll body to appear upright within the toy bank, and a viewing window through which both the coin and the upright reflection may be viewed together. For example, the coin may be thrown through the entrance into a mouth portion of the doll body so that a reflection is created in which the coin appears to be in the mouth of the image of the doll body, and upon operation of an external element, appears to be eaten by the image of the doll body. As another example, the coin may be dropped between the hands of the doll, so that a reflection is created in which the image of the doll appears to hold the coin in its hands, and upon operation of an external element, the hands of the doll are raised and the coin appears to disappear. The external operating element is provided to operate a coin release in the doll body to release the coin

into a coin storing area of the toy bank.

As explained, the present invention is directed to a toy bank which in a preferred embodiment has an entrance for throwing in a coin, a doll body inverted inside the toy bank, a concave mirror reflecting the doll body to appear upright within the toy bank, and a viewing window through which both the coin and the upright image of the doll may be viewed together. Drop restraining means are preferably provided for holding the coin in view with the image of the doll body, and an external operating element is preferably provided to release the coin into a coin storing area (coin storage area) in the toy bank. The coin storing area is preferably provided at a lower portion of the toy bank.

The external operating element is preferably mounted externally on the toy bank for manual movement, and the drop restraining means are preferably responsive to operation of the external operating element so that the restraint or release of the coin into the bank can be externally and manually controlled.

For example, when a coin is deposited into the entrance of the toy bank into, for example, the mouth portion of the doll body, then the reflection in the concave mirror, when observed through the viewing window portion, is such that the image of the doll body appears to be eating the coin.

When the external operating element is operated, then the coin deposited into the inside of the toy bank through the entrance in the toy bank is gradually admitted into the mouth portion of the doll body by a guiding action of the drop restraining means. Consequently, when observed from the viewing window

portion, the image of the doll body appears to be gradually eating the coin. Subsequently, the coin is deposited into the storing area of the toy bank.

Alternatively, a different doll body can be used, having a wall upon which an animated image is imposed, and hands which are provided on opposite sides of the coin. The coin is deposited into the hands of the doll, so that the image of the doll appears to hold the coin. Upon release of the coin by operation of the external element, the coin is dropped behind the wall and appears to disappear from the hands of the image of the doll. Then the hands of the image disappear.

The invention will now be further described by way of example with reference to the accompanying drawings, in which:-

Fig.1 is a general perspective view showing an embodiment of a coin deposit toy bank according to the present invention;

Fig.2 is a vertical sectional view of the coin deposit toy bank in a first embodiment of the present invention;

Fig.3 is a fragmentary perspective view of the coin deposit toy bank in a first embodiment of the present invention;

Fig.4 is a rear elevational view showing a condition wherein the inside of the coin deposit toy bank is viewed from the rear side in a first embodiment of the present invention;

Fig.5 is a side elevational view in which the inside of the coin deposit toy bank is viewed from the front side;

Fig.6 is a front view of the coin retaining figure in the coin deposit toy bank in a second

embodiment of the present invention;

Fig.7 is a front view of the coin retaining figure in Fig.6 with the animated face plate removed;

Fig.8 is a cross-section of the coin retaining figure shown in Fig.7; and

Fig.9 is a front view of the coin retaining figure as shown in Fig.7, after the external operating element has been depressed.

As shown in Figs. 1 and 2, the toy bank 1 includes a bank body 4 having a coin entrance 2 and a viewing window 3. A doll body 5 (coin retaining figure) is disposed in inverted orientation in a space in the inside of the bank body 4 such that it cannot be observed from the outside. A concave mirror 8 is disposed at a position in the bank body 4 at which it can be observed by way of the viewing window 3, such that the concave mirror 8 reflects the coin 7 being thrown into a mouth 6 of the doll body 5 through the coin entrance 2. The reflection is reversed by the concave mirror 8 so that an image of the inverted doll body 5 appears upright and appears to be eating the coin 7. An external operating element 9 is mounted for manual movement on the bank body 4, and a coin release 5C, 5F and drop restraint 16A, 16B are provided responsive to an operation of the external operating element 9, for restraining a sudden drop of the coin 7 after it has been deposited into the inside of the bank body 4 through the coin entrance 2 so that the coin 7 may be admitted gradually into the mouth portion 6 of the doll body 5.

Because the toy bank 1 has the construction described above, when a coin 7 is deposited through the coin entrance 2 toward the

inside of the mouth portion 6 of the doll body 5 disposed in the inside of the bank body 4, the coin 7 is held gently by the drop restraint 16A and 16B to prevent the coin 7 from dropping, but if a pressing operation of the external operating element 9 is performed repetitively after the coin 7 is deposited into the coin entrance 2 by hand, then the coin 7 is gradually admitted into the mouth portion 6 of the doll body 5 by an action of the drop restraint 16A, 16B and coin release 5C, 5F. This process is reflected inversely by the concave mirror 8, so that to an observer the upright image 100 of the doll body 5 appears through the viewing window 3 to be gradually eating the coin 7.

A detailed construction of the first embodiment of the toy bank 1 will now be described.

The bank body 4 described above has, as shown in Fig. 3, a front case 4A and a rear case 4B, secured to each other by means of fastening screws 11. At an upper position of the front case 4A, the viewing window 3 is provided through which the inside of the bank body 4 can be observed. At a lower position of the viewing window portion 3, a side plate 12 having a flat top portion is formed integrally with the front case 4A. Two bosses 13 are provided projectingly in a predetermined spaced relationship from each other beneath the side plate 12. A base plate 14 which forms a body portion 14A of the doll body 5 is fixed to the bosses 13 and the rear face of the side plate 12. A member 15 is mounted to the base plate 14 to form a channel therebetween which defines the coin entrance 2. The member 15 has a first hand-shaped plate 16A which forms an arm portion and a hand portion of the doll body 5.

A horizontally elongated hole 22 is provided on the opposite side of the base plate 14

from the first hand-shaped plate 16A, and a pin 17,
provided at a central portion of a second hand-
shaped plate 16B, extends through the elongated hole
22 and is slidable therein. A sliding plate 19 is
5 securely mounted on the pin 17 by means of a
fastening screw 18. A hook 20 is provided
integrally on the base plate 14 at a position of the
base plate 14 adjacent to the opposite side of and
at the same height as the elongated hole 22, and a
10 coil spring 21 is attached to the hook 20 and
extends between the hook 20 and the sliding plate
19. The coil spring 21 is provided to hold a coin 7
thrown in through the coin entrance 2 with only
light resilience from the opposite sides between the
15 first hand-shaped plate 16A and the second hand-
shaped plate 16B. A recess 23 is provided at a
lower portion of the base plate 14, and a pair of
bearings 24 for a pivot shaft 5E (which will be
hereinafter described) are formed at the opposite
20 ends of the recessed portion 23.

A partition (partition plate) 26 is
provided for partitioning the inside of the bank
body 4 a concave mirror disposing chamber 25A at an
upper location and a coin storing chamber 25B at a
25 lower location. The partition plate 26 has a
through-hole 27 through which the head portion 5A of
the doll body 5 is partially inserted. The doll
body 5 is disposed in inverted orientation such that
it is directed toward the concave mirror disposing
30 chamber 25A as shown in Fig. 4, and the
aforementioned body portion 14A is constituted from
the pair of hand-shaped plates 16A and 16B provided
on the base plate 14, two projecting large eyes 5B,
a tooth portion 5C extending in a transverse line,
35 two supporting pieces 5D supporting the head portion
5A thereon and forming the mouth portion 6, a tongue
5F secured to a pivot shaft 5E on which the two

supporting pieces 5D are mounted. A counterflow stopper 10 is provided (see Fig. 2) in the mouth portion 6 in an opposing relationship to the tongue 5F, and a rocking plate 5G is secured to an end of the pivot shaft 5E.

5 The counterflow stopper 10 is provided to prevent, when the toy bank 1 is placed upside down, a counterflow of coins 7 in the storing chamber 25B so that the coins 7 may not go out to the outside again by way of the through-hole 27, and an arcuate guiding inclined portion 10A is provided for gradually guiding a coin 7 thrown into the mouth portion 6 to the inside of the storing chamber 25B so that on the upper side of the counterflow stopper 10 the coin 7 may not drop suddenly into the coin 7 storing chamber 25B. It should be noted that the opposite ends of the pivot shaft 5E are supported for pivotal motion on the aforementioned bearing portions 24. Also, a coin removing hole 28 is formed at a central location of bottom plates 27 formed on the front case 4A and rear case 4B, and a coin removing lid 29 is removably attached to the coin 7 removing hole 28 through which a coin 7 may be removed from the bank body 4.

25 A vertically elongated hole 30 is formed in a front face portion 2A of the front case 4A, and a pin 31 attached to the manually operable external operating element 9 extends through the elongated hole 30 to slide vertically therein. A rocking plate 33 is securely mounted on the pin 31 by way of a fastening screw 32. The sliding plate 33 is vertically slidable with the pin 31 and operating element 31 and an engaging piece 34 of a triangular shape is provided on the sliding plate 33. The engaging piece 34 is engaged with an engaged portion 5H formed on the rocking plate 5G to pivot the pivot shaft 5E connecting to the engaged portion 5H in the

bearing portions 24 thereby to move the head portion 5A and tongue portion 5F of the doll body 5.

5 The concave mirror 8 is disposed at a position in the concave mirror disposing chamber 25A such that the image 100 can be seen by way of the viewing window 3 as shown in Figs. 1 and 5. A rear portion of the concave mirror 8 is securely mounted by means of fastening screws 35. The concave mirror 8 is provided to reflect, in the inside of the viewing window portion 3, the image of a coin 7 with the doll body 5 when a coin 7 is thrown into the mouth portion 6 of the doll body 5 through the coin entrance 2 so that the doll body 5 appears erect and appears to be eating the coin 7.

10 The operation according to the first embodiment of the toy bank when a coin is deposited therein will now be described.

15 Before a coin 7 is thrown in, the doll body 5 is pivoted back in a counterclockwise direction in Fig. 2 around the pivot member 5E by its own weight, and the tongue 5F of the doll body 5 in the box body 4 is positioned just below the entrance 2.

20 If, at this time, a coin 7 is thrown into the coin throwing in entrance 2 from the viewing window portion 3, then the coin 7 is stopped and the opposite ends of the coin 7 are held slightly resiliently between the first hand-shaped plate 16A and the second hand-shaped plate 16B. However, if the coin 7 is pushed completely in, then it enters until a lower face thereof is contacted with an upper face of the tongue 5F of the doll body 5 and stopped by the upper face.

25 If, at this time, a user manually depresses the external operating element 9 provided on the bank body 4, the engaging piece 34 of the sliding member 33 pushes down the engaged portion 5H

of the rocking member 5G so that the pivot shaft 5E, integral with the rocking member 5G, is pivoted in the clockwise direction (in Fig. 2) in the bearing portions 24 of the base plate 14. Upon this pivotal motion, the tongue 5F is pivoted toward the inner face side of the front case 4A (to the rightward in Fig. 2) while pushing up the lower face of the coin 7 from below. The holding of the coin 7 by the tongue 5F is terminated by this pivotal motion, and thereupon, the coin 7 is moved down slightly. Then, a portion of the tooth portion 5C of the doll body 5 is contacted with a front face side (left-hand side in Fig. 2) of the coin 7 to prevent downward movement of the coin 7.

If, at this time, the user stops depressing the external operating element 9 then the doll body 5 is pivoted in the counterclockwise direction in Fig. 2 around the pivot shaft 5E by its own weight, and concurrently, the tooth portion 5C is also pivoted in the same direction to terminate the holding of the coin 7. Consequently, due to the impact or vibration of this operation and the termination of this holding of the coin 7, the coin 7 is further moved down toward the inside of the mouth portion 6 of the doll body 5. However, immediately after this, an end of the tongue 5F is contacted with a rear side (right-hand side in Fig. 2) of the coin 7 to prevent a complete drop of the coin 7.

If depression of the external operating element 9 and a termination of this depression are repeated in this manner, the coin 7 is gradually moved down into the mouth portion 6 of the doll body 5 and finally drops into the storing chamber 25B through the inside of the mouth portion 6. The arcuate inclined portion 10A formed in the mouth portion 6 of the doll body 5 contacts with an upper

face portion of the inclined portion 10A when the coin 7 drops so that sudden dropping thereof is restricted. Thus it appears through the viewing window 3, in reversed orientation as reflected by the concave mirror 8, that the coin 7 drops gradually into the mouth portion 6 of the doll body 5 in response to the operations of the external operating element 9 as described above, and as a result, the doll body 5 appears to gradually eat the coin 7 by virtue of, moving the coin 7 little by little. Since this draws attention, a user of the toy bank will be encouraged to successively throw coins 7 into the coin entrance 2, desiring to reproduce the appearance of the doll body 5 eating the coin 7, and as a result, money is rapidly accumulated.

It is to be noted that, while the doll body is of the movable type in the present embodiment, such construction may be employed that the doll body is of the immovable type and a coin 7 thrown into the coin throwing in entrance 2 is dropped as it is into the storing chamber 25B through the inside of the mouth portion 6 by its own weight. Further, while the doll body 5 and mouth portion 6 in the present embodiment are pivoted, when the external operating element 9 is depressed repetitively and gradually alternately in the clockwise direction and the counterclockwise direction in Fig. 2 around the pivot shaft 5E, the hand-shaped plate 16B may also be moved simultaneously in addition to the doll body 5 and mouth portion 6.

The coin retaining figure in the second embodiment of the present invention is shown in Figures 6-9. In the second embodiment, the bank body 4, concave mirror 8 and external operating element are the same as in the first embodiment.

However, a coin retaining figure 102 is provided in the second embodiment which is differently constructed from the doll body 5, mouth 6, counterflow stopper 10, base plate 14, hand-shaped plates 16A and 16B, etc., with comprise the coin retaining in the first embodiment.

Fig. 6 shows a front view of the coin retaining figure 102 in the second embodiment of the present invention. An animated face plate 104 is secured to a base plate 106 by screws 108. The base plate 104 is attached to the bank body 4 in the same fashion as the base plate 14 in the first embodiment. An animated figure 110 is imposed on the animated face plate 104 and the image 100 of a reflection by the mirror 8 of the animated figure 110 appears through the viewing window 3 of the bank body 4. An opening 112 is provided in the face plate 104 through which hands 114 and mirror 116 also appear in the image 100 reflected by the mirror 8 through the viewing window 3.

Fig. 7 shows the coin retaining figure 102 with the animated face plate 104 removed and Fig. 8 shows a cross-section of this part of the coin-retaining figure. The mirror 8 is secured to the base plate 106 by screws 118. The hands 114 are pivotally attached to a sliding pin 120 disposed through openings 122. The coin 7 rests on coin rest 123 at the end of a coin stop 124, pivotally mounted in the base plate 106, upon deposit into the bank body 4 until depression of the external operating element 9.

The sliding pin 120 slides vertically within a vertical slot 126 when a lever 127, pivotally mounted on the base plate 106, is rotated by a depression of the external operating element 9. This vertical movement serves two purposes. First, upward movement of the sliding pin 120 moves an

angled support 128 on which the coin stop rests, so that the coin stop 124 is gradually retracted until the coin 7 is allowed to fall quickly behind the animated face plate 118. As a result, the coin 7 appears to disappear from the opening 112 and the mirror 116 appears in its place. Because the sliding pin is held at one end of the vertical slot 126 by a spring 130, the coin 7 will be held in place, and in view through the spring 112 until the external operating element 9 is depressed, as shown in Fig 7. Additionally, upward movement of the sliding pin 120 also upwardly causes the hands 114 to pivot away from the mirror 116 and coin 7, adding to the illusion of disappearance of the coin 7 when the external operating element 9 is depressed.

Fig. 9 shows the coin retaining figure shown in Fig. 7, after the external operating element has been depressed. The hands 114 have been rotated away from the coin 7, and the coin 7 has begun to drop as a result of the upward movement of the sliding pin 120 which moves the coin rest 124 from beneath the coin 7.

It should be noted that, while the doll body 5 assumes the form of an abstracted animal or supernatural figure in the described embodiments, it is not limited to this appearance and may also appear as a human being or some other shape.

Also, the doll body 5 and/or hand-shaped plate 16B may be moved electrically as well as manually.

Finally, while the embodiment is described as a toy bank hereinabove, it may be used either as a savings bank or merely as a toy for the enjoyment of the image created. For the latter, a storage section for coins is not necessarily required.

CLAIMS

1. A coin deposit toy bank into which a coin is deposited, comprising:
 - a bank body;
 - a coin retaining figure, connected within said bank body, and retaining the coin upon deposit; and
 - a mirror connected within said bank body and confronting said coin retaining figure, and reflecting an image of the coin together with said coin retaining figure.
2. A coin deposit toy bank as claimed in claim 1, wherein said coin retaining figure is disposed inversely within said bank body, and said mirror is a concave mirror which reflects the image to appear upright with respect to said bank body.
3. A coin deposit toy bank as claimed in claim 1 or 2, wherein said bank body comprises a viewing window, confronting said mirror, through which the image is viewed.
4. A coin deposit toy bank as claimed in any one of the preceding claims, wherein said coin retaining figure comprises a coin deposit slot into which the coin is deposited.
5. A coin deposit toy bank as claimed in any one of the preceding claims, wherein said bank body additionally comprises a coin storage area provided beneath said coin retaining figure and defined by a partition provided inside and horizontally across said bank body.
6. A coin deposit toy bank as claimed in claim 4 and 5, wherein said coin retaining figure further comprises a counter flow stopper, disposed beneath the coin deposit slot and above said coin storage area and

preventing flow of the coin out of said coin storage area.

7. A coin deposit toy bank as claimed in claim 5 or 6, wherein said bank body has a coin removing hole provided in said coin storage area.

8. A coin deposit toy bank as claimed in any one of claims 5 to 7, wherein the partition which defines said coin storage area is provided with an animated design, and an image of the design is reflected by the mirror together with the image of the coin and said coin retaining figure.

9. A coin deposit toy bank as claimed in any one of claims 5 to 8, further comprising a coin release operatively connected to said coin retaining figure to release the coin into said coin storage area.

10. A coin deposit toy bank as claimed in claim 9, further comprising an external operating element, provided externally to the bank body and operatively connected to said coin release and operable to release the coin into said coin storage area.

11. A coin deposit toy bank as claimed in claim 9 or 10, wherein said coin retaining figure comprises a face plate operatively connected to and provided vertically within said bank body, and a coin rest pivotally connected to said face plate, disposed beneath the coin slot and operable by said external operating element to support and release the coin.

12. A coin deposit toy bank as claimed in any one of claims 9 to 11, wherein said coin retaining figure comprises a doll having a mouth disposed below the coin slot, and upon release of the coin by said coin release, the coin enters the mouth of the doll.

13. A coin deposit toy bank as claimed in any one of claims 9 to 12, wherein said coin retaining figure further comprises an animated face plate having an opening, said animated wall confronting said mirror and reflecting an animated image from the mirror together with the coin through the opening.

14. A coin deposit toy bank as claimed in claim 13, wherein upon release of the coin by said coin release the coin drops behind said animated wall and the image of the coin disappears from view through the viewing window.

15. A coin deposit toy bank as claimed in claim 13 or 14, wherein said animated wall comprises an animated figure, and wherein said coin retaining figure comprises hands provided on either side of the coin, and said external operating element moves the hands away from the coin while operating said coin release to release the coin.

16. A coin deposit toy bank as claimed in claim 4 or any one of claims 5 to 15 when dependent upon claim 4, wherein the coin deposit slot further comprises a drop restraint.

17. A coin deposit toy bank as claimed in claim 16, wherein said coin retaining figure comprises a face plate operatively connected to and provided vertically within said bank body, and said drop restraint comprises walls provided on opposite sides of the coin, one of the walls slidably coupled to said face plate and held against the coin by a spring attached to said face plate.

18. A coin deposit toy bank, substantially as hereinbefore described, with reference to and as illustrated in Figures 1 to 5 or Figures 1, and 6 to 9.
